

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference P30000/WO Kf	FOR FURTHER ACTION See item 4 below	
International application No. PCT/EP2005/007554	International filing date (<i>day/month/year</i>) 12 July 2005 (12.07.2005)	Priority date (<i>day/month/year</i>) 13 August 2004 (13.08.2004)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant ROHDE & SCHWARZ GMBH & CO. KG		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

Date of issuance of this report
13 February 2007 (13.02.2007)

Authorized officer

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Form PCT/IB/373 (January 2004)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

TRANSLATION

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing **See form PCT/ISA/210**
(day/month/year)

Applicant's or agent's file reference

P30000/WO Kf

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/EP2005/007554

International filing date (day/month/year)

12.07.2005

Priority date (day/month/year)

13.08.2004

International Patent Classification (IPC) or both national classification and IPC

H01Q1/52, H01Q21/30, H01Q9/30

Applicant

ROHDE & SCHWARZ GMBH & CO. KG

1. This opinion contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|--|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the opinion |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 60.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/IEP

Authorized officer

Facsimile No.

Telephone No.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

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Box No. 1 Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This opinion has been established on the basis of a translation from the original language into the following language
_____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
- a. type of material
- ☐ a sequence listing
- ☐ table(s) related to the sequence listing
- b. format of material
- ☐ in written format
- ☐ in computer readable form
- c. time of filing/furnishing
- ☐ contained in the international application as filed.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/EP2005/007554

**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability:
citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	<u>5, 7, 9-12, 14</u>	YES
	Claims	<u>1-4, 6, 8, 13</u>	NO
Inventive step (IS)	Claims	<u>5</u>	YES
	Claims	<u>1-4, 6-14</u>	NO
Industrial applicability (IA)	Claims	<u>1-14</u>	YES
	Claims	<u></u>	NO

2. Citations and explanations:

- 1 Reference is made to the following documents:
- D1: EP 1 445 832 A (FUBA AUTOMOTIVE GMBH & CO. KG) 11 August 2004 (2004-08-11)
- D2: WO 01/71846 A (ERICSSON INC; WILCOX, BRUCE, EMERSON; DOUGLAS, MARK, GORDON) 27 September 2001 (2001-09-27)
- D3: US 3 961 331 A (CAMPBELL ET AL) 1 June 1976 (1976-06-01)
- D4: US 6 542 131 B1 (HAAPANEN VEIJO) 1 April 2003 (2003-04-01)
- D5: US-A-5 600 335 (ABRAMO ET AL) 4 February 1997 (1997-02-04)
- D6: EP-A-1 093 187 (SHAKESPEARE COMPANY) 18 April 2001 (2001-04-18)

2 INDEPENDENT CLAIM 1

The present application does not satisfy the requirements of PCT Article 33(1) because the subject matter of claim 1 is not novel within the meaning of PCT Article 33(2).

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Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

- 2.1 Document D1 discloses a receiving antenna system that includes all the features of claim 1 (the references between parentheses apply to said document):
- with a higher bandwidth (see abstract: several frequency ranges)
 - comprising several active vertical antennae (see abstract and Figures 5 and 6)
 - which have an electrically active antenna height adapted to the respective receiving frequency range (see summary, and paragraph [0018] and figures 5 and 6)
 - the mutual electromagnetic coupling between the individual antennae which are positioned at a short distance from each other is minimised (see column 5, lines 9-11).
- 2.2 Document D2 likewise discloses a receiving antenna system that includes all the features of claim 1 (see page 1, lines 9-21, and figures 2, 4), whereby the expression "vertical antennae" is implicit in a mobile communications device, because such a device is brought into any position relative to the horizon during use, on account of its mobility.
- 2.4 Document D3 also discloses a receiving antenna system that comprises all the features of claim 1 (see column 1, lines 10-22, and figures 3, 4).
- 2.5 Document D4 likewise discloses a receiving antenna

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Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability:
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system comprising all the features of claim 1 (see abstract), the reduced electromagnetic coupling being provided by the "suppressing element 5".

3 DEPENDENT CLAIMS 2-4, 6-14

Claims 2-7, 13 do not contain any features which, in combination with the features of any claim to which they refer, meet the PCT requirements for novelty and inventive step:

- Claim 2: not novel over each of documents D1-D4, because the parameters specified in the claim that are to be optimised are taken into consideration in any antenna design, especially since each of the documents defines minimisation of the coupling as an aim.
- Claims 3 and 4: not novel over each of documents D1-D4.
- Claim 6: not novel over document D1 (paragraph [0015]);
- Claim 7: not inventive over a combination of D1 with D5 (see column 1, lines 16-19) or D6;
- Claim 8: not novel over D2 (see page 11, line 30).
- Claim 9: not inventive, because in the field of high-frequency engineering the use of an impedance and a capacitor for adaptation is common practice;
- Claim 10: not inventive over D2;
- Claim 11: not inventive, because in the field of high-frequency engineering the use of an impedance and an inductance for adaptation is common practice;
- Claim 12: not inventive over D2, because the

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Box No. V

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feature of mismatching outside the useful
frequency range is implicitly contained in D2;
- Claim 13: not novel over D2 (see page 10, line
16);
- Claim 14: trivial in relation to D1.

4 Claim 5 is novel and involves an inventive step
because the feature involving shorter lengths with
increasing distance from the foot is not suggested
by the prior art.

5. There appears to be a word missing in claim 10,
line 11. Claim 12 refers back to itself.